AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-10. (Canceled)

11. (Currently Amended) ~~The temperature sensor of claim 7,~~ A temperature sensor, comprising:

a comparator circuit having an output node and a variable current node, wherein the output node is a first voltage at a given temperature when a current at the variable current node is less than a threshold current, and a different second voltage at the given temperature when the current at the variable current node is more than the threshold current;

first and second variable resistance circuits connected in series between the variable current node of the comparator and a supply voltage, wherein the first variable resistance circuit includes m resistors connected in series, where n is an integer of 4 or more and the m resistors have different resistance values from each other, and wherein the second variable resistance circuit includes n resistors connected in series, where m is an integer of 4 or more and the n resistors have different resistance values from each other;

a first switching circuit which selectively bypasses individual ones of the m resistors of the first variable resistance circuit; and

a second switching circuit which selectively bypasses individual ones of the n resistors of the second variable resistance circuit,

wherein the first switching circuit comprises at least m transistors connected across respective ones of the m resistors, wherein gate terminals of the m transistors are responsive to a first input test signal to selectively bypass the m resistors,

respectively, and wherein the second switching circuit comprises at least n transistors connected across respective ones of the n resistors, wherein gate terminals of the n transistors are responsive to a second input test signal to selectively bypass the n resistors, respectively.

12. (Currently Amended) The temperature sensor of claim 11, wherein m equals n, and wherein resistance values of the m resistors of the first variable resistance circuit are respectively the same as resistance values of the n resistors of the second variable resistance circuit ~~8, wherein the first switching circuit comprises at least m transistors connected across respective ones of the m resistors, wherein gate terminals of the m transistors are responsive to a first input test signal to selectively bypass the m resistors, respectively, and wherein the second switching circuit comprises at least n transistors connected across respective ones of the n resistors, wherein gate terminals of the n transistors are responsive to a second input test signal to selectively bypass the n resistors, respectively~~.

13. (Currently Amended) The temperature sensor of claim 12, wherein one resistor among the n resistors has a lowest resistance value, and wherein the remaining resistors among the n resistors have resistance values which are multiples of the resistance value of the lowest resistance value ~~9, wherein the first switching circuit comprises at least m transistors connected across respective ones of the m resistors, wherein gate terminals of the m transistors are responsive to a first input test signal to selectively bypass the m resistors, respectively, and wherein the second switching circuit comprises at least n transistors connected across respective ones of the n resistors, wherein gate terminals of the n transistors are responsive to a second input test signal to selectively bypass the n resistors, respectively~~.

14. (Currently Amended) The temperature sensor of claim 12, wherein one resistor R1 among the n resistors has a lowest resistance value x, and wherein the remaining resistors R2, R3, ... , Rn-1 among the n resistors have resistance values of

x·2, x·4, ... , x·(2n-1) ~~10, wherein the first switching circuit comprises at least m transistors connected across respective ones of the m resistors, wherein gate terminals of the m transistors are responsive to a first input test signal to selectively bypass the m resistors, respectively, and wherein the second switching circuit comprises at least n transistors connected across respective ones of the n resistors, wherein gate terminals of the n transistors are responsive to a second input test signal to selectively bypass the n resistors, respectively~~.

15. (Original) The temperature sensor of claim 11, further comprising a trimming circuit connect in parallel to the first variable resistance circuit, wherein the trimming circuit includes a second set of m transistors connected across the m resistors of the first variable resistance circuit, respectively, and m latch circuits which selectively latch the gates of the second set of m transistors to a high voltage.

16. (Original) The temperature sensor of claim 12, further comprising a trimming circuit connect in parallel to the first variable resistance circuit, wherein the trimming circuit includes a second set of m transistors connected across the m resistors of the first variable resistance circuit, respectively, and m latch circuits which selectively latch the gates of the second set of m transistors to a high voltage.

17. (Original) The temperature sensor of claim 13, further comprising a trimming circuit connect in parallel to the first variable resistance circuit, wherein the trimming circuit includes a second set of m transistors connected across the m resistors of the first variable resistance circuit, respectively, and m latch circuits which selectively latch the gates of the second set of m transistors to a high voltage.

18. (Original) The temperature sensor of claim 14, further comprising a trimming circuit connect in parallel to the first variable resistance circuit, wherein the trimming circuit includes a second set of m transistors connected across the m

resistors of the first variable resistance circuit, respectively, and m latch circuits which selectively latch the gates of the second set of m transistors to a high voltage.

19-33. (Canceled)